UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,937	12/15/2005	Jukka Henriksson	1004289.198US (4208-4226)	6887

85775   7590   01/29/2010
Locke Lord Bissell & Liddell LLP
Attn: IP Docketing
Three World Financial Center
New York, NY 10281-2101

EXAMINER
SHAH, TANMAY K

ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
01/29/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptopatentcommunication@lockelord.com

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _12 November 2009_.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-43_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-17,19-24 and 26-41_ is/are rejected.
7)☒ Claim(s) _18,25,42 and 43_ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   This communication is in response to the Amendment to application 10/517,937

filed on 11/12/09.

Response to Arguments

2.   The corrected abstract has been received with the response and is below 150

words. It is accepted and the objection has been withdrawn.

Double Patenting

3.   Claim 1 was rejected on the ground of nonstatutory obviousness-type double

patenting as being unpatentable over claim 1 of U.S. Patent No. 7,522,513. Applicant

request examiner to provide a prima facie case of obviousness based on the claim

limitations as required by MPEP 804 (II).

4.   In response to above mentioned arguments the examiner provided the reason

below why it is considered non-statutory obvious type double patenting. The

nonstatutory double patenting rejection is based on a judicially created doctrine

grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent

and to prevent possible harassment by multiple assignees.   A nonstatutory

obviousness-type double patenting rejection is appropriate where the conflicting claims

are not identical, but at least one examined application claim is not patentably distinct

from the reference claim(s) because the examined application claim is either anticipated

by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29

USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163

USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d)

may be used to overcome an actual or provisional rejection based on a nonstatutory

double patenting ground provided the conflicting application or patent either is shown to

be commonly owned with this application, or claims an invention made as a result of

activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a

terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with

37 CFR 3.73(b).

Instant application	Patent 7,522,513
A method for receiving a multi-cartier signal, the method comprising the steps of: detecting a presence of at least one impulse interference within the signal, blanking samples where significant amount of the impulse noise caused by the at least one impulse interference is present to obtain a signal with blanking, determining an estimate of the signal with blanking,	A method comprising: detecting a presence of impulse interference within a multi-carrier signal, and replacing digital values substantially affected by the impulse interference with estimated digital values, which are obtained by determining an estimate in a frequency domain based on modified digital values substantially affected by the impulse interference and prior known information, the estimated digital values representing a desired signal, wherein the modified digital values are based on blanking digital values substantially

determining carrier correction values, which carrier correction values are based on deviations of certain carrier values compared to prior known information, and the blanking, and influencing the estimate by the carrier correction values to obtain a representation of a desired signal.	affected by the impulse interference to obtain a signal with blanking, and wherein the replacing further comprises: calculating a pre-estimate of the signal with the blanking in the frequency domain, calculating a difference between the pre-estimate and the prior known information, calculating said estimate of the blanked signal using the difference in the frequency domain, deriving correction values, and deriving the estimated digital values representing the desired signal.

6.   So, regardless of the performing frequency domain transfer or not it still does solve the similar problem.

## *Claim Rejections - 35 USC § 103*

7.   Regarding independent claim 1, applicant argues that Fig. 2C of the primary reference Maja does not disclose limitation "determining carrier correction values are based on deviations of certain carrier values compared to prior known information, and the blanking" and it is impermissible hindsight.

8.   **Applicant is reminded that a rejection is made en light of the entire reference cited by examiner.**

9.   In response to above-mentioned arguments, applicant's interpretation of the

applied reference has been considered. However, the applied reference teaches

limitations of argued matter. First, as shown in Fig. 2 a – f the method of removing

corrupted samples by impulse noise. So, as shown in Fig. 2C, it shows the time domain

samples of the corrupted impulse (y_k) and then in Fig. 2 (f) it gives the estimated signal.

After that as shown in Fig. 3 it uses the predetermined constellation points (i.e. prior

known information) with the estimated or the deviations of certain carrier values, which

helps cancel the impulse noise. It is known in the art and is reasonable to understand

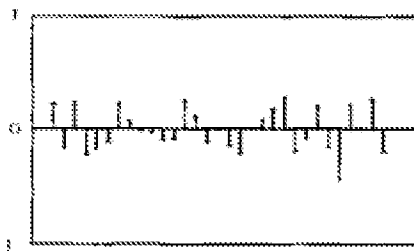and interpret for person in the ordinary skilled in the art.

Please refer to the Figs. below.
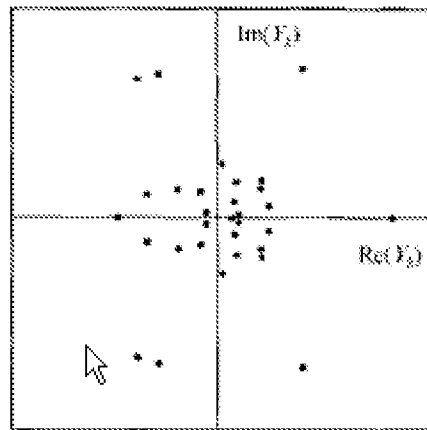
(d) spectrum (Y_i)
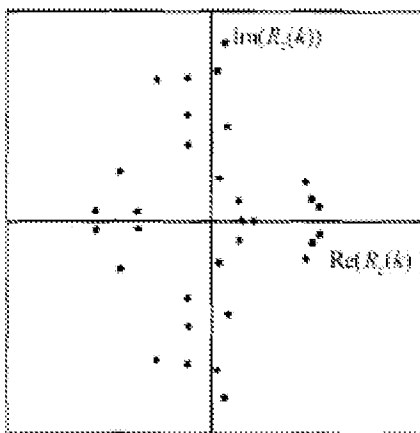
(e) spectrum $R_c(k)$
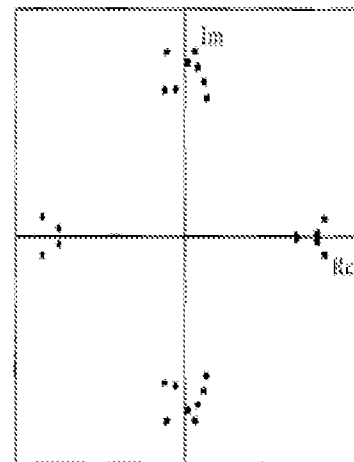
(f) estimated signal $r_{est,i}$

Fig. 3: Spectrum of the signal after impulse noise cancellation for SNR = 18 dB

As, shown in Figs and discussed above it is clear that the estimated is than corrected using the known constellation points.

8.   Applicant also argues that the Maja reference employs matrix inversion in order

to get back the time domain samples. The claimed embodiment does not need to return

to the time domain et all, avoiding computation of the Fast Fourier Transform (FFT)

twice in addition to the cumbersome matrix inversion. The claimed invention does not

transform the regenerated domain samples into frequency domain to make corrections.

9.   In response to the above mentioned arguments, Examiner agrees that the

present invention does without use of matrix calculation or doing FFT transformation

twice. But, it is not claimed. Regardless of it does matrix transformation and FFT twice

the result will be the same as claimed.

10.   Applicant also argues In addition to avoiding unnecessary complexity, another

fundamental difference in that the claimed invention does not try to reconstruct missing

samples (e.g., not in the time domain nor transformed into the frequency domain), but

rather employs a statistical estimation approach using available information (e.g., pilot

deviations) in the best (e.g., minimum mean square sense) possible way to obtain

carrier correction values. As a result, embodiments of the present invention can

calculate the carrier correction values directly in the frequency domain.

        At least two benefits, and accordingly, technically advantageous effects of the

above differences are clear. First, embodiments of the present invention avoid

complexity (e.g., the inversion of huge matrixes and taking FFT twice). Secondly,

embodiments of the present invention make one of the most accurate estimates that

statistical theory can provide, as opposed to the approach disclosed in Maja, which is

clearly distinguishable from what was done in Maja and not obvious even to persons

skilled in the art. Additionally, there are variations offered by various embodiments of the present invention where all the pilot values can be utilized, or the approach of using only two or four closest pilots to make the estimate. These are only possible due to the significantly different approach the present invention has taken as compared to Maja.

11.   Again, as described above, Examiner agrees that the present invention does without use of matrix calculation or doing FFT transformation twice. But, it is not claimed. Also, the application does estimation using MMSE. Regardless of it does matrix transformation and FFT twice the result will be the same as claimed or using different method than MMSE to estimate. None of them is relevant as it is not in the claim.

12.   Applicant also argues that the secondary reference ETSI does not determine carrier correction values are based on deviations of certain carrier values compared to prior known information.

13.   Examiner agrees, it is not taught by the secondary reference and is never disclosed the previous office action. The previous office action used the primary reference Maja to teach those features. The secondary reference only used to show that the corrected samples shown in Fig.3 will be converted to a desired signal. Examiner cited various cells within the OFDM frame are modulated with reference information whose transmitted value is known to receiver. Cells containing reference information are transmitted at "boosted" power level. The information transmitted in these cells are scattered or continual pilot cells, so at the receiver side use of demapping and reference it computes the desired signal, page 26, section 4.5.1). So,

based on the samples it generates the signal which is not disclosed in the primary

reference Maja.

14.   Again, it would have been obvious as it will provide the desired output and in the

signal form rather than in samples. It is known in the art that in order to make changes

to the signal it has to be sampled, but when it outputs it has to be again in continuous

signal form rather than samples.

15.   The claims 18, 25, 42 – 43 still objected as being allowable if written in

independent form with all limitations of intervening claims.

Claim Rejections - 35 USC § 103

16.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

17.   Claims 1 – 17, 19 – 24, 26 - 41 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Maja Sliskovic (Signal Processing Algorithm for OFDM Channel With

Impulse Noise) (Maja hereafter) in further view of Digital Video Broadcasting (DVB);

framing structure, channel coding and modulation for digital terrestrial television" ETSI

EN 300 744 V1.1.1, January 2001, Cover and pp. 2 – 49 (ETSI hereafter).

Regarding claim 1, A method for receiving a multi-carrier signal, the method

comprising the steps of:

detecting a presence of at least one impulse interference within the signal (**i.e. the receiver detects the presence and the position of the impulse within the OFDM symbol of combining the power calculation in time And frequency domain, samples corrupted by impulse noise are reconstructed by using the redundancy of the guard band in frequency domain, Abstract**),

blanking samples where significant amount of the impulse noise caused by the at least one impulse interference is present to obtain a signal with blanking (**i.e. in the received signal, the position of the impulse is determined by the method presented in the previous chapter, and the corresponding samples are set to zero, setting zero the corrupted is considered blanking, page 224, section 4, equation 10**),

determining an estimate of the signal with blanking (**i.e. the corrupted samples can be estimated. with the estimates P_k and the samples r_{ZK}, a signal is formed and the digital information obtained, page 224, section 4, equation 13**),

determining carrier correction values, which carrier correction values are based on deviations of certain carrier values compared to prior known information, and the blanking (**i.e. signal constellation, some other restriction on the signal constellation in complex plane may also be used to enhance the system performance or to increase the length of the allowed impulse length, as shown in Fig. 2 (c) the received carrier values are compared with the known constellation and then corrected, As, shown in Fig. 2 and 3 and discussed above it is clear that the estimated is than corrected using the known constellation points in Fig. 3**),

however does not disclose influencing the estimate by the carrier correction values to

obtain a representation of a desired signal.

ETSI teaches influencing the estimate by the carrier correction values to obtain a

representation of a desired signal (**i.e. various cells within the OFDM frame are**

modulated with reference information whose transmitted value is known to

receiver. Cells containing reference information are transmitted at "boosted"

power level. The information transmitted in these cells are scattered or continual

pilot cells, so at the receiver side use of demapping and reference it computes

the desired signal, page 26, section 4.5.1).

It would have been obvious to one of the ordinary skilled in the art at the time the

invention was made to combine the teachings of Maja with ETSI . One would be

motivated to combine these teachings because in doing so it will provide the desired

output more accuratley.

Regarding claim 2, Maja with ETSI teaches claim 1,

Maja further teaches wherein the step of determining the estimate comprises the

step of calculating the estimate by a time domain to frequency domain transform of the

signal with the blanking and temporarily storing the estimate (**i.e. the algorithm**

proposed in this paper uses redundancy in the frequency domain to cancel the

impulse noise in time domain, also it is inherent to one of the ordinary skilled in

the art to have memory to temporary store the blanking estimate, page 222,

section 1, col 2).

Regarding claim 3, Maja teaches claim 1. however does not specifically disclose the

steps of carrier correction values.

ETSI teaches calculating a difference between observed pilot values and known

values for pilot carriers (**i.e. various cells within the OFDM frame are modulated with**

reference information whose transmitted value is known to receiver. Cells

containing reference information are transmitted at "boosted" power level. The

information transmitted in these cells are scattered or continual pilot cells, so at

the receiver side use of demapping and reference it computes the desired signal,

page 26, section 4.5.1),

calculating weight values (**i.e. normalization factor**) corresponding to blanking

window position, and applied pilot based system (**i.e. as shown in table 6, the**

normalization is done with use of constellation, page 26),

calculating the carrier correction values based on the difference and the weight

values for each carrier (**it does it for each carrier, i.e. the value of the scattered or**

continual pilot information is derived from a PRBS which is a series values, one

for each carrier, page 26), and

calculating the corrected estimate by computing the cartier correction values with
the stored estimate (**i.e. it is inherent to one of ordinary skilled in the art to have
memory element for each correction value for each carrier**).

Regarding claim 4, A method according to claim 1, further comprising before the step of
determining the estimate, the step of shifting sampled signal in such a way that a
blanking window is substantially centred at first sample position, and compensating the
phase shift for each carrier before forwarding a corrected estimated signal.

Regarding claim 5, Maja with ETSI teaches method according to claim 1,

Maja further teaches wherein the step of detecting is based on a sliding window
calculation (**i.e. sliding window, 'To determine the impulse position within the
symbol, the power calculation on sliding window in the time domain will be used,
page 224, col 1, section 3**).

Regarding claim 6, Maja with ETSI teaches method according to claim 1,

Maja further teaches A method according claim 1, wherein the step of detecting
is based on monitoring an exceeding of a threshold in amplitude of the signal (**i.e. the**

detect impulse noise and determine its position, amplitude, power, auto-

correlation function, so the amplitude is the threshold, page 223, section 3, col 2).

Regarding claim 7, Maja with ETSI teaches method according to claim 1,

Maja further wherein the step of detecting is based on monitoring amplitude

variations (**i.e. the detect impulse noise and determine its position, amplitude,**

power, auto-correlation function, so the amplitude is the threshold, page 223,

section 3, col 2).

Regarding claim 8, Maja with ETSI teaches claim 1,

Maja further teaches a method according to claim 1, wherein the step of blanking

comprises blanking a predetermined amount of digital values substantially coincident

with the impulse interference (**i.e. the blanking is the value being replaced with 0**

where the impulse noise is detected, so it is coincide with the interference, page

224, section 4).

Regarding claim 9, Maja with ETSI teaches claim 1,

Maja further teaches step of blanking comprises a predetermined set of blanking

window positions (**i.e. as shown in Equation 9, it is preset page 224, section 4**).

Regarding claim 10, Maja with ETSI teaches claim 1,

Maja further teaches wherein the step of blanking comprises blanking digital

values which coincide with the impulse interference (**i.e. the blanking is the value**

being replaced with 0 where the impulse noise is detected, so it is coincide with

the interference, page 224, section 4, it is digital since it is converted to digital for

processing in communication systems).

Regarding claim 11, Maja with ETSI teaches claim 1,

Maja further teaches wherein the step of blanking is based on an appliance of

position and duration of the impulse interference (**i.e. the blanking is the value being**

replaced with 0 where the impulse noise is detected, so it is coincide with the

interference, page 224, section 4, it is the interference caused by different

appliances in household as admitted by the applicant).

Regarding claim 12, Maja with ETSI teaches claim 1,

Maja further teaches wherein the step of blanking comprises blanking digital

values directly affected by the impulse interference and digital value neighbouring the

impulse interference (**i.e. the blanking is the value being replaced with 0 where the**

impulse noise is detected, so it is coincide with the interference, page 224,

section 4, it is in neighbouring digital value form different appliances).

Regarding claim 13, Maja with ETSI teaches claim 1,

Maja further teaches wherein a blanking window comprises at least one of a

rectangular blanking window, and a blanking window with smooth transitions at end (**i.e.**

it is inherent to one of ordinary skilled in the art that the digital data will be

rectangular window and the blaking will be smooth since it will be replaced by

zero as mentioned above).

Regarding claim 14, Maja with ETSI teaches claim 1,

ETSI further teaches wherein the carrier correction values are calculated for

various carriers based on various pilot values (**i.e. please refer to frame structure,**

page 27, Fig. 11, shown the pilot and continual pilots between Kmin and Kmax

values).

Regarding claim 15, Maja with ETSI teaches claim 1,

ETSI further teaches wherein the carrier correction values are calculated based

on two closest pilots (**i.e. constellation points and Fig. 11 frame structure**).

Regarding claim 16, Maja with ETSI teaches claim 1,

Maja further teaches wherein a covariance function is applied in the calculation of

the carrier correction values (**i.e. to detect impulse noise and determine its position,**

amplitude, power, auto-correlation function (i.e. covariance function) or spectrum

of the received signal, or the combination of the above, can be analysed, page

223, col 2, section 3).

Regarding claim 17, Maja with ETSI teaches claim 1,

Maja further teaches A method according to claim 16, wherein location of a

blanking window is taken in account in deriving the covariance function (**i.e. to detect**

impulse noise and determine its position, amplitude, power, auto-correlation

function (i.e. covariance function) or spectrum of the received signal, or the

combination of the above, can be analysed, page 223, col 2, section 3).

Regarding claim 19, Maja with ETSI teaches claim 1,

Maja further teaches wherein the certain carrier values comprises observed pilot

carrier values of the received signal affected by the impulse interference (**i.e. the**

blanking is the value being replaced with 0 where the impulse noise is detected,

so there will be impulse interference in some received pilot, page 224, section 4,).

Regarding claim 20, Maja with ETSI teaches claim 1,

Maja further teaches wherein the prior known information comprises previously

received pilot carrier values (**i.e. previous received symbols or pilots**).

Regarding claim 21, Maja with ETSI teaches claim 1,

ETSI further teaches wherein the previously received pilot carrier values

comprise transmitted pilot values multiplied with a channel estimate on pilot frequencies

(**i.e. it is mulitplied by the normalization factor as needed as described above**).

Regarding claim 22, Maja with ETSI teaches claim 1,

ETSI further teaches wherein the previously received pilot carrier values are not

affected by impulse interference (**i.e. it is inherent since the previous values are not**

interference then the next values will be received, because the it will be replaced

by zero).

Regarding claim 23, Maja with ETSI teaches claim 1,

ETSI further teaches wherein the prior known information comprises interpolated

pilot carrier values, wherein the interpolated pilot (**i.e. phase shift**) carrier values are

obtained from a set of received OFDM symbols, wherein certain pilot carrier values

affected by the impulse interference is interpolated based on pilot carrier values

received before and after the certain pilot carrier values (**i.e. various cells within the

OFDM frame are modulated with reference information whose transmitted value is

known to receiver. Cells containing reference information are transmitted at

"boosted" power level. The information transmitted in these cells are scattered or

continual pilot cells, so at the receiver side use of demapping and reference it

computes the desired signal, page 26, section 4.5.1**).

Regarding claim 24, Maja with ETSI teaches claim 1,

ETSI further teaches method according to claim 23, wherein the pilot carrier

values are multiplied with a channel estimate on respective pilot frequencies.

 (**i.e. it is mulitplied by the normalization factor as needed as described above**).

Regarding claim 26, Maja with ETSI teaches claim 1,

ETSI further teaches wherein the pilot carrier values are contained in at least one

OFDM symbol of the received signal (**i.e. OFDM, it contains OFDM symbol, Annex**).

Regarding claim 27, Maja with ETSI teaches claim 1,

ETSI further teaches wherein the multi-carrier signal comprises OFDM signal.

(i.e. it is multicarrier OFDM).

Regarding claim 28, Maja with ETSI teaches claim 1,

ETSI further teaches wherein the OFDM signal is operable in at least one of a

DVB system, a terrestrial DVB system and a ISDB-T system **(i.e. it is DVB**).

Regarding claim 29, there are substantially same limitations as claim 1, thus the same

rejection is applicable.

Regarding claim 30, there are substantially same limitations as claim 27, thus the same

rejection is applicable.

Regarding claim 31, there are substantially same limitations as claim 28, thus the same

rejection is applicable.

Regarding claim 32, Maja with ETSI teaches claim 29,

ETSI further teaches means for interaction with a service provider providing the

signal (**i.e. it is inherent to have interaction to service provider since it interference**

with the received signal).

Regarding claim 33, Maja with ETSI teaches claim 32,

ETSI further teaches means for interaction comprising cellular mobile operable

under coverage of cellular mobile network (**i.e. it is inherent to implement in**

cellphone like described CDMA).

Regarding claim 34, there are substantially same limitations as claim 2, thus the same

rejection is applicable.

Regarding claim 35, there are substantially same limitations as claim 3, thus the same

rejection is applicable.

Regarding claim 36, there are substantially same limitations as claim 27, thus the same rejection is applicable.

Regarding claim 37, there are substantially same limitations as claim 32, thus the same rejection is applicable.

Regarding claim 38, there are substantially same limitations as claim 1, thus the same rejection is applicable.

Regarding claim 39, there are substantially same limitations as claim 28, thus the same rejection is applicable.

Regarding claim 40, there are substantially same limitations as claim 1, thus the same rejection is applicable.

Regarding claim 41, there are substantially same limitations as claim 1, thus the same rejection is applicable.

Allowable Subject Matter

18.   Claims 18, 25, 42 and 43 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

19.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANMAY K. SHAH whose telephone number is (571)270-3624. The examiner can normally be reached on Mon-Thu (7:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TANMAY K SHAH/
Examiner, Art Unit 2611

/David C. Payne/
Supervisory Patent Examiner, Art Unit 2611